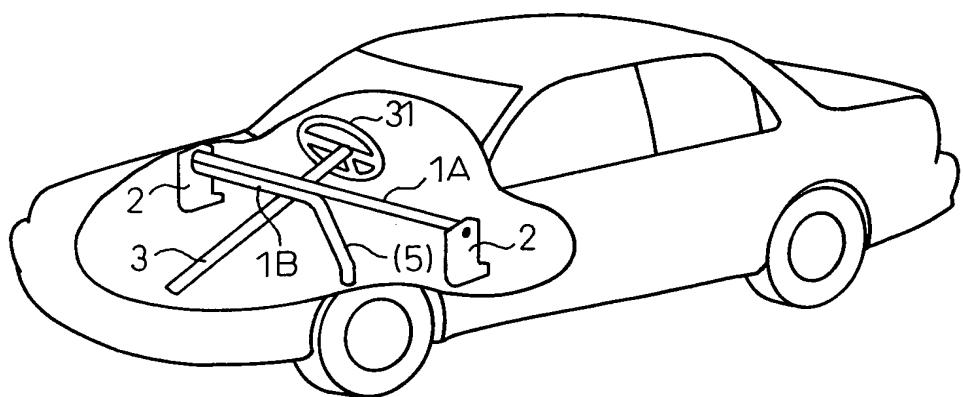




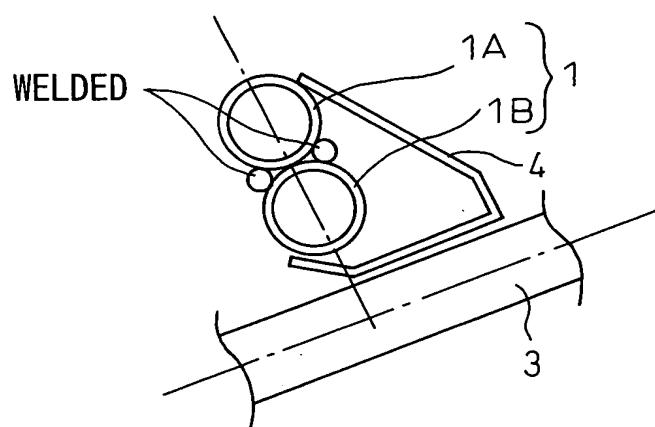
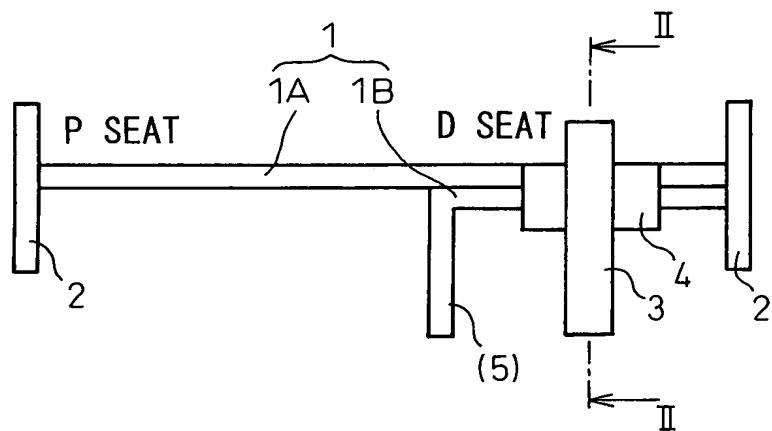
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Fig. 1



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Fig. 2



SECTIONAL VIEW ALONG II - II

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Fig. 2A

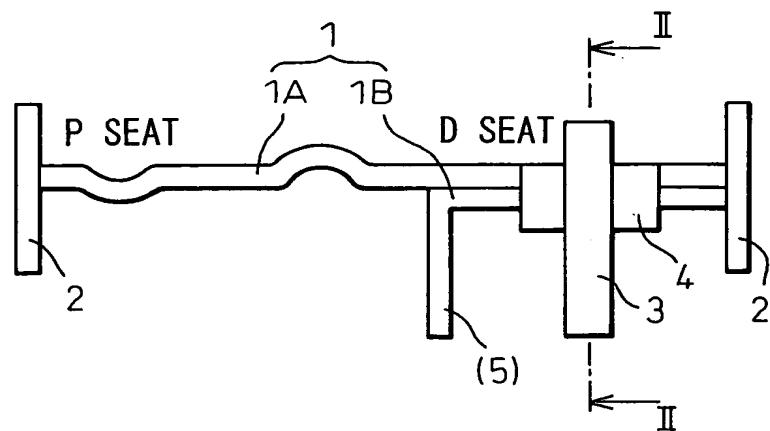
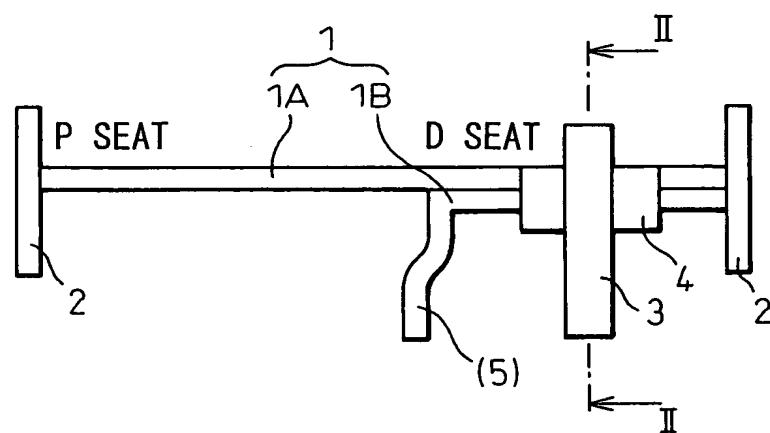


Fig. 2B



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Fig.3

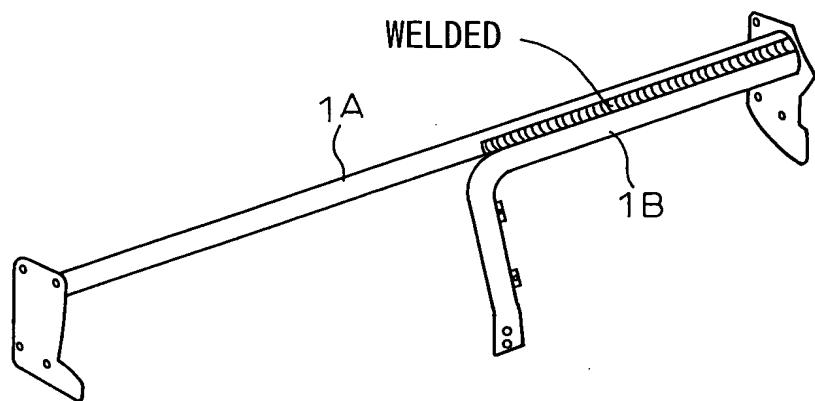
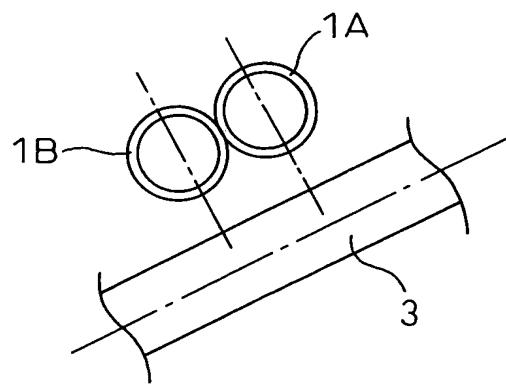
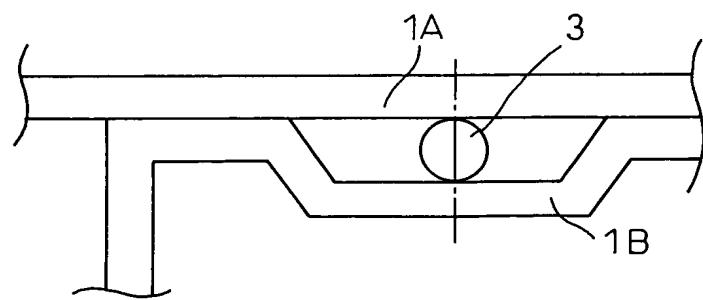
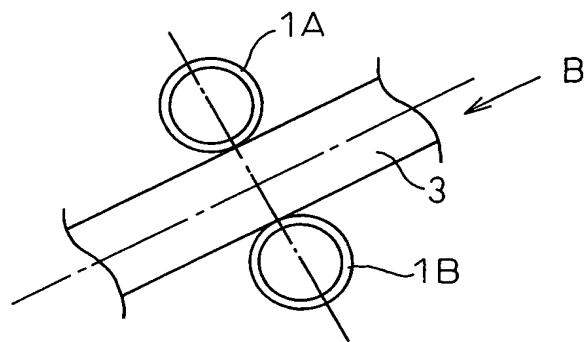


Fig.4



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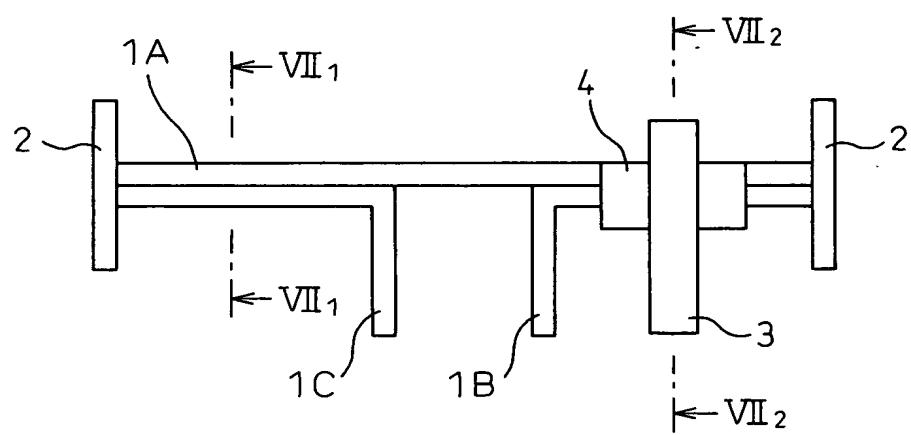
Fig.5



VIEW ALONG ARROW B

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Fig.6



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Fig.7A

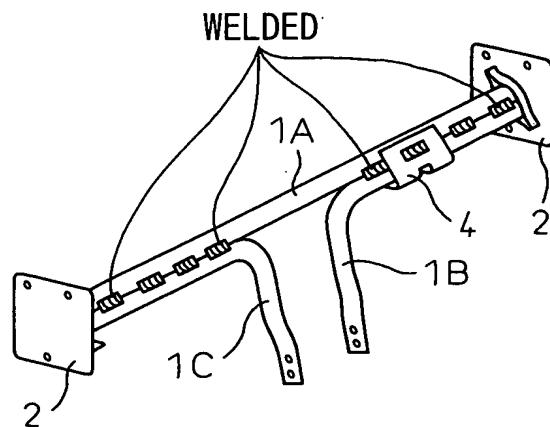
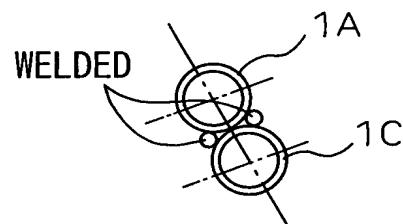
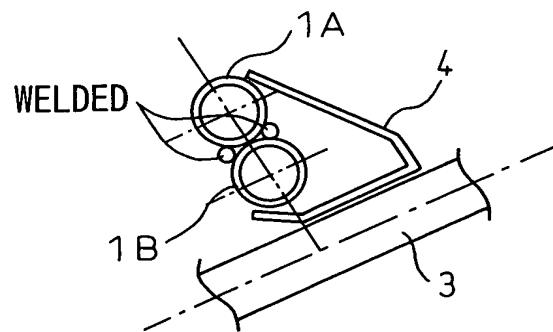


Fig.7B



SECTIONAL VIEW ALONG VII<sub>1</sub>-VII<sub>1</sub>

Fig.7C



SECTIONAL VIEW ALONG VII<sub>2</sub>-VII<sub>2</sub>

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Fig.8A

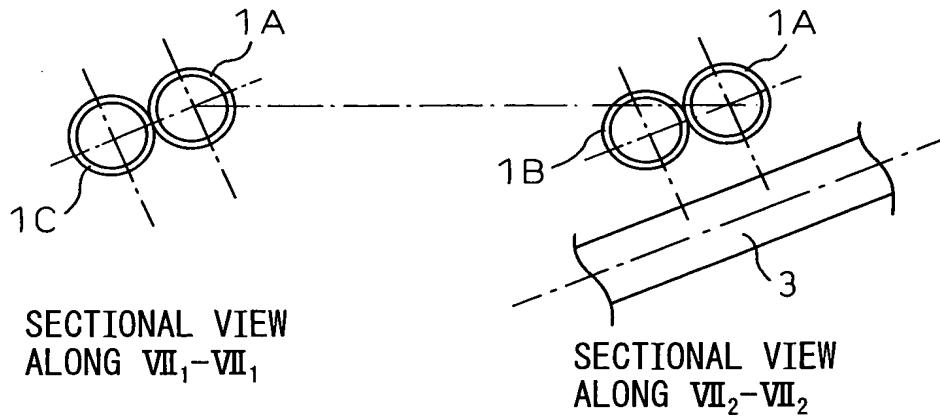


Fig.8B

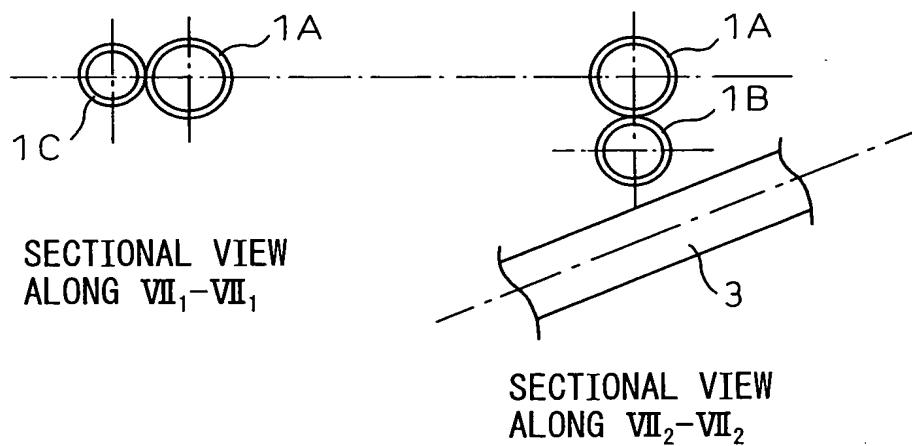
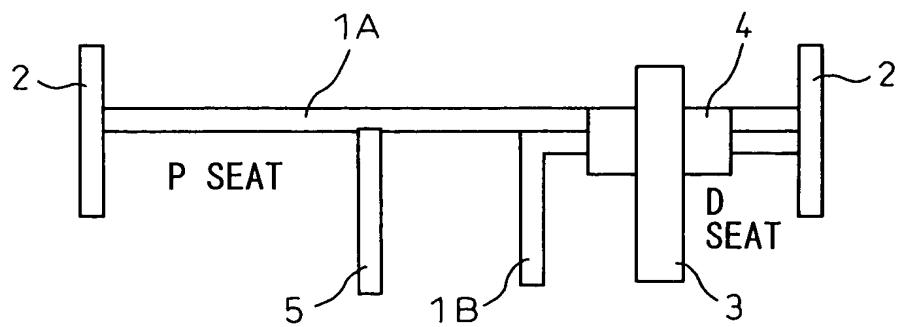
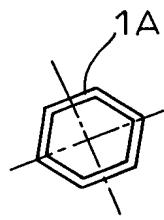
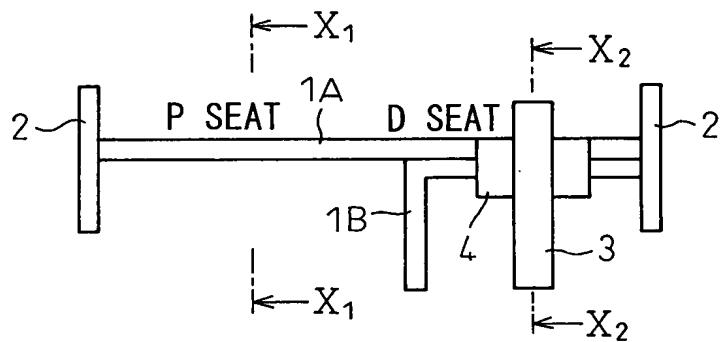


Fig.9

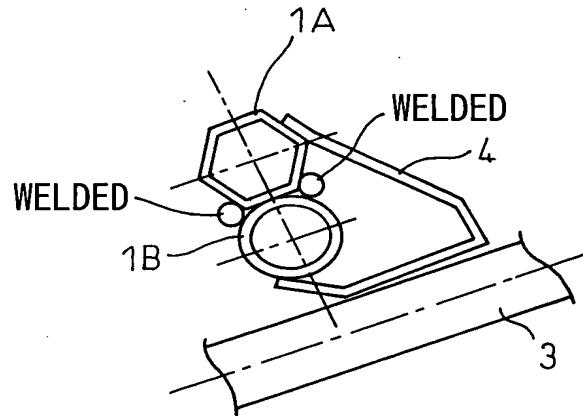


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Fig.10



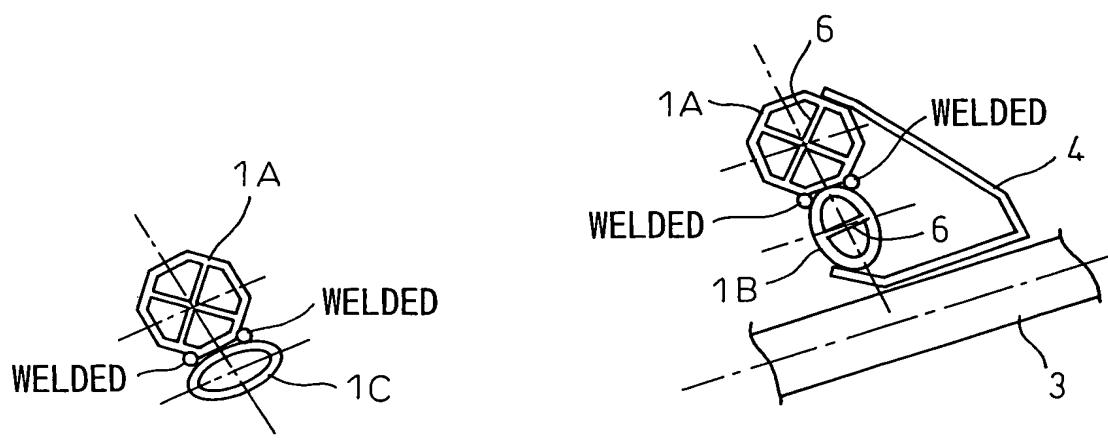
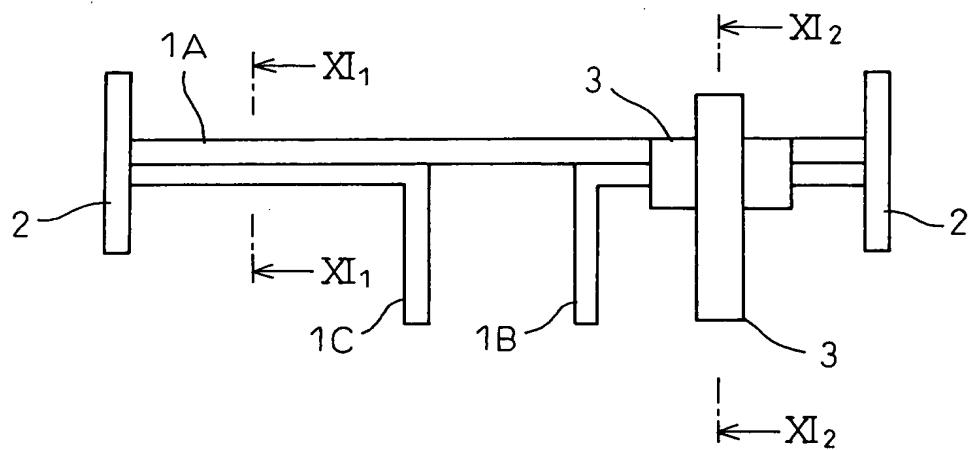
SECTIONAL VIEW  
ALONG X<sub>1</sub>-X<sub>1</sub>



SECTIONAL VIEW  
ALONG X<sub>2</sub>-X<sub>2</sub>

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Fig.11



SECTIONAL VIEW  
ALONG XI<sub>1</sub>-XI<sub>1</sub>

SECTIONAL VIEW  
ALONG XI<sub>2</sub>-XI<sub>2</sub>

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Fig.12A

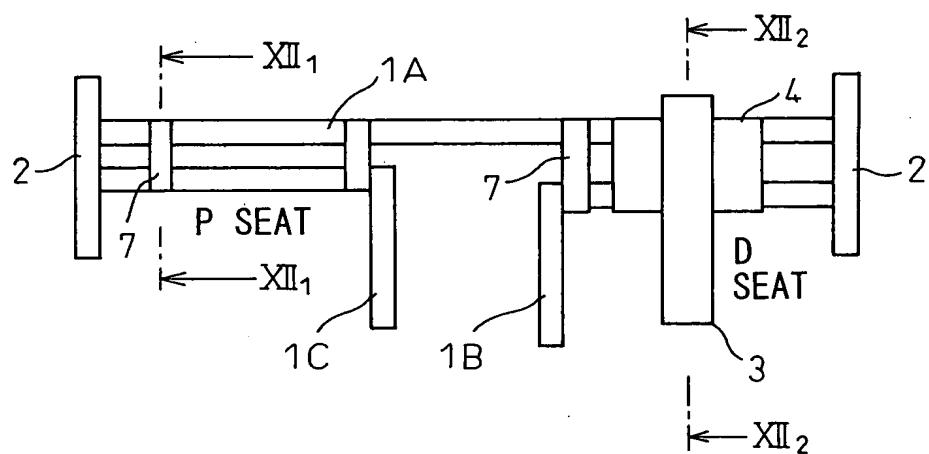
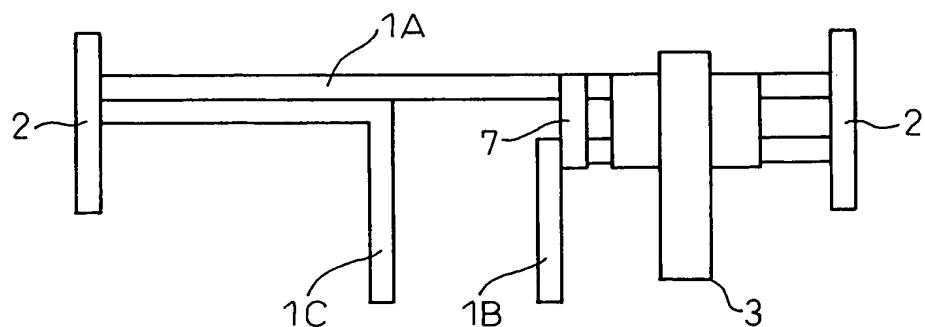


Fig.12B



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Fig.13A

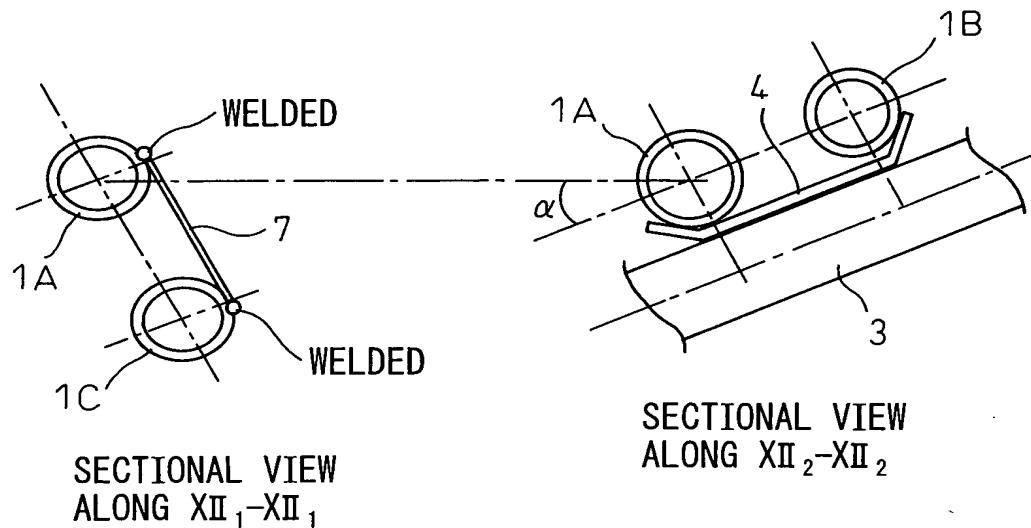
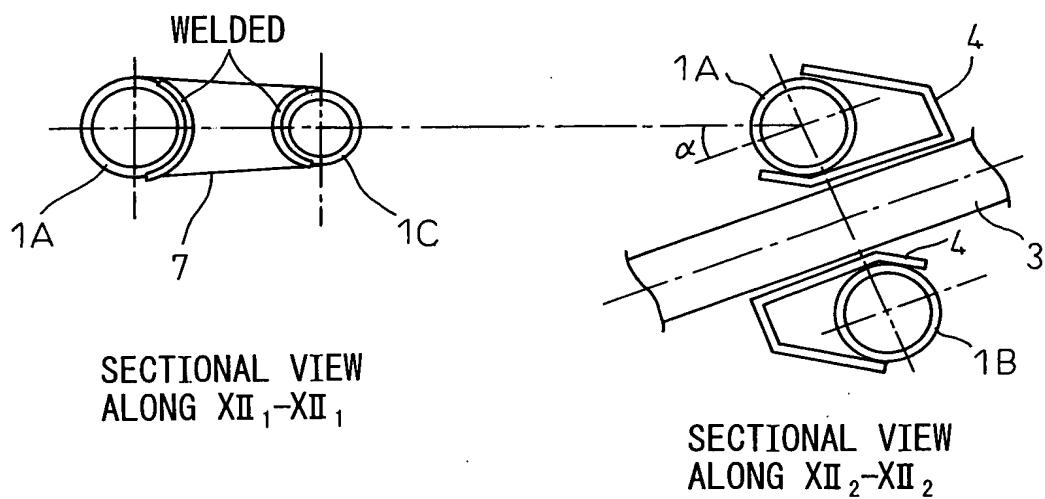


Fig.13B



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Fig.14

• WEIGHT AND AREA COMPARISON [mm]

	CONVENTIONAL CCB	2-PIPE CCB	3-PIPE CCB
CCB	Fe PIPE OF Φ54, t1.6	Fe PIPE OF Φ38.1, t1.2	Fe PIPE OF Φ38.1, t1.0
BRACE	t 1.2	-	-

<WEIGHT EFFICIENCY> [kg]

WEIGHT	CONVENTIONAL CCB	2-PIPE CCB	3-PIPE CCB
CCB	2.80	1.48	1.25
BRACE	0.47	0.94	1.50
SUM	3.27	2.42	2.75

\*WEIGHT CALCULATED FROM 3D MODEL.  
BRACE WEIGHT OF 2- AND 3-PIPE CCBs  
REPRESENTED BY L-SHAPED LOWER CCB WEIGHT

<SECTIONAL AREA> [mm<sup>2</sup>]

SECTIONAL AREA	CONVENTIONAL CCB	2-PIPE CCB	3-PIPE CCB
CENTRAL PORTION	9,161	4,560	←
D SEAT PORTION	9,161	9,120	←
P SEAT PORTION	9,161	4,560	9,120

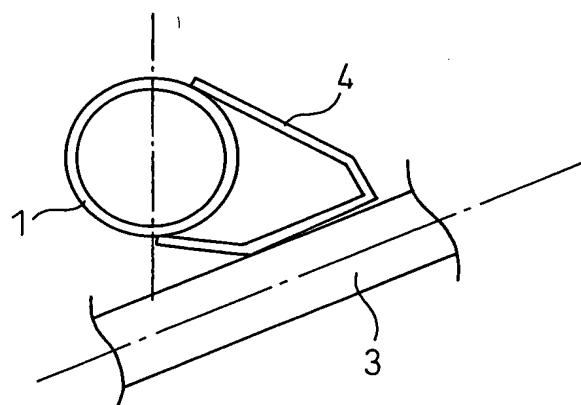
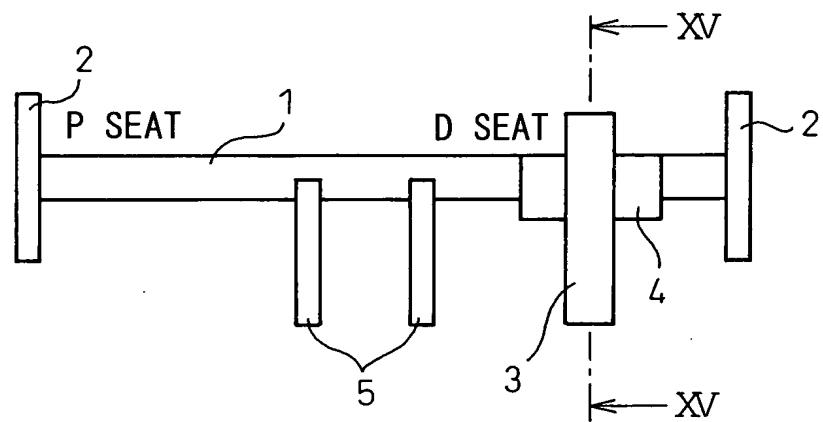
• COMPARISON OF DEFORMATION STRENGTH ANALYSIS  
(REACTION AGAINST CCB 20mm INDICATED BY INDEX)

	CONVENTIONAL CCB	2-PIPE CCB	3-PIPE CCB
D SEAT PORTION	100	100	105
P SEAT PORTION	100	55	105

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Fig.15

PRIOR ART



SECTION ALONG XV-XV